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John C Maceli* (Maceli@Ithaca.edu), Mathematics Department, Williams Hall, Ithaca College, Ithaca, NY 14850. *Chebyshev Polynomials and their Relationship to Trigonometry and the Fibonacci Numbers*. Preliminary report.

This talk will illustrate the connections between Chebyshev Polynomials, Trigonometry and the Fibonacci Numbers(and the Lucas Numbers) . Using identities satisfied by the Chebyshev Polynomials we develop results from trigonometry and also Fibonacci identities. We show how to use a trigonometric identity (or Fibonacci identity) to find an identity for Chebyshev Polynomials. We will also show how these polynomials can be used in an "explorations" type mathematics course. (Received September 22, 2010)